

CLAIMS

What is claimed is:

1           1.    A fiber optic module comprising:  
2           a pull-lever actuator to disengage and withdraw the fiber  
3           optic module from a cage assembly; and  
4           one or more electro-optic transducers to convert optical  
5           signals into electrical signals or electrical signals into optical  
6           signals.

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1           2.    The fiber optic module of claim 1 wherein,  
2           the pull-lever actuator is activated to disengage and  
3           withdraw the fiber optic module by a single downward pull action.

1           3.    The fiber optic module of claim 1 wherein,  
2           the pull-lever actuator to lever a release latch and pull out  
3           on the fiber optic module.

1           4.    The fiber optic module of claim 3 further comprising:  
2           a catch to engage the release latch of a cage to retain the  
3           fiber optic module therein.

1           5.    The fiber optic module of claim 1 further comprising:  
2           one or more electrical contacts to couple to one or more  
3           electrical contacts of a host printed circuit board.

1           6.    The fiber optic module of claim 1 further comprising:  
2           an edge connection of a printed circuit board with one or

3 more electrical contacts to couple to an edge connector of a host  
4 printed circuit board.

1 7. The fiber optic module of claim 1 wherein,  
2 the fiber optic module is an SFP fiber optic module and the  
3 cage assembly is an SFP cage assembly.

1 8. The fiber optic module of claim 1 wherein,  
2 the pull-lever actuator includes an EMI shield to contain EMI  
3 emissions.

1 9. The fiber optic module of claim 1 wherein,  
2 the pull-lever actuator includes  
3 a lever arm to lever between the fiber optic module and  
4 the cage assembly to release a hook of the fiber optic module from  
5 a latch of the cage assembly.

1 10. The fiber optic module of claim 1 wherein,  
2 the pull-lever actuator includes  
3 a pull grip,  
4 a lever arm coupled to the pull grip,  
5 an EMI shield coupled to the lever arm, and  
6 grounding tabs coupled to the EMI shield.

1 11. The fiber optic module of claim 1 wherein,  
2 the pull-lever actuator includes  
3 a pull grip having dimples to prevent slippage of a  
4 user's grip on the pull-lever actuator.

1 12. The fiber optic module of claim 1 wherein,  
2 the pull-lever actuator includes  
3 a pull ring to allow a user's finger to pull down and  
4 out on the pull-lever actuator.

1 13. The fiber optic module of claim 1 wherein,  
2 the pull-lever actuator is formed of a conductive material.

1 14. The fiber optic module of claim 13 wherein,  
2 the pull-lever actuator is formed of metal.

1 15. A pull-lever actuator for fiber optic modules having one  
2 or more electro-optic transducers, the pull-lever actuator  
3 comprising:

4 a pull grip to allow a user to grip a first end of the pull-  
5 lever actuator;

6 a lever arm coupled to the pull grip, the lever arm to lever  
7 between the fiber optic module and a cage assembly to release a  
8 hook of the fiber optic module from a latch of the cage assembly;

9 an EMI shield coupled to the lever arm at a second end of the  
10 pull-lever actuator, the EMI shield to contain EMI emissions; and

11 grounding tabs coupled to the EMI shield, the grounding tabs  
12 to provide a grounding link between the EMI shield and the  
13 cage assembly.

1 16. The pull-lever actuator of claim 15 wherein,  
2 the pull-lever actuator is activated to disengage and

3 withdraw the fiber optic module from the cage assembly by a single  
4 downward pull action.

1 17. The pull-lever actuator of claim 15 wherein,  
2 the pull grip has dimples.

1 18. The pull-lever actuator of claim 15 wherein,  
2 the pull-lever actuator is formed of metal.

1 19. The pull-lever actuator of claim 15 wherein,  
2 the fiber optic module is an SFP fiber optic module and the  
3 cage assembly is an SFP cage assembly.

1 20. A fiber optic module comprising:  
2 means for converting between optical signals and electrical  
3 signals; and  
4 means for disengaging and withdrawing the fiber optic module  
5 from a cage assembly using a downward pull.

1 21. The fiber optic module of claim 20 further comprising;  
2 means for shielding electromagnetic radiation.

1 22. The fiber optic module of claim 20 further comprising;  
2 means for grounding the means for shielding electromagnetic  
3 radiation.

1 23. A method to withdraw a fiber optic module from a cage,  
2 the method comprising:

3 providing a pull-lever actuator for the fiber optic module;  
4 pushing down on an end of the pull-lever actuator to lever a  
5 latch and release a catch; and  
6 pulling out on the end of the pull-lever actuator to withdraw  
7 the fiber optic module from the cage.

1 24. The method of claim 23 wherein,  
2 the fiber optic module includes a hook to engage the catch of  
3 the latch of the cage when inserted therein and  
4 the pushing down of the end of the pull-lever actuator levers  
5 the latch so the catch is disengaged from the hook.

1 25. The method of claim 23 wherein,  
2 the pushing down and pulling out on the end of the pull-lever  
3 actuator is by one motion.

1 26. A method to withdraw a fiber optic module from a cage,  
2 the method comprising:  
3 providing a lever actuator and a pull actuator for the fiber  
4 optic module;  
5 pushing down on an end of the lever actuator to lever a latch  
6 and release a catch; and  
7 pulling out on an end of the pull actuator to withdraw the  
8 fiber optic module from the cage.

1 27. The method of claim 26 wherein,  
2 the fiber optic module includes a hook to engage the catch of  
3 the latch of the cage when inserted therein and

4 the pushing down of the end of the lever actuator levers the  
5 latch so the catch is disengaged from the hook.

1 28. The method of claim 26 wherein,  
2 the pulling out on the end of the pull actuator withdraws the  
3 fiber optic module.

1 29. A fiber optic module comprising:  
2 a lever actuator to disengage the fiber optic module from a  
3 cage assembly;  
4 a pull actuator to withdraw the fiber optic module from the  
5 cage assembly; and  
6 one or more electro-optic transducers to convert between  
7 optical signals and electrical signals.

1 30. The fiber optic module of claim 29 wherein,  
2 the lever actuator to lever a latch of a cage and to release  
3 a catch of the fiber optic module.

1 31. The fiber optic module of claim 30 wherein,  
2 the catch to engage the latch of the cage to retain the fiber  
3 optic module therein.

1 32. The fiber optic module of claim 29 further comprising:  
2 an edge connection of a printed circuit board with one or  
3 more electrical contacts to couple to an edge connector of a host  
4 printed circuit board.

1           33. The fiber optic module of claim 29 wherein,  
2           the fiber optic module is an SFP fiber optic module which can  
3 be inserted and withdrawn from an SFP cage.

1           34. The fiber optic module of claim 29 wherein,  
2           the pull actuator for a user to pull out on the fiber optic  
3 module and to withdraw it from a cage.

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